WHAT IS CLAIMED IS:

1. A method of dynamic routing for efficiently determining a message-transporting path between a sending host and destination host on the Internet by finding a routing host when the sending host cannot effectively connect to the destination host, the method comprising the steps of:

a. directly transporting messages to the destination host by the sending host, then ending the method if success, or proceeding to step b;

b. finding a series of routers which can be effectively connected to between the sending host and the destination host and successively putting the Internet protocol (IP) addresses of the series of routers into a list;

c. proceeding to step d if the list comprises at least an IP address, otherwise proceeding to step i;

d. moving a pointer to point to the last IP address of the list;

e. finding a domain of the IP address pointed by the pointer;

f. proceeding to step g if a message-routing-in-charge host is found, otherwise proceeding to step h;

g. sending the messages to the message-routing-in-charge host by the sending host, regarding the message-routing-in-charge host as another sending host, then proceeding to the step a;

h. proceeding to step i if the IP address pointed by the pointer is the first IP address of the list, otherwise proceeding step j;

i. keeping the messages in the sending host for a predetermined time, then proceeding to the step a; and

j. moving the pointer to point to an IP address previous to that presently pointed in the list and proceeding to the step e.

2. The method according to claim 1, wherein the step b uses a path-tracing program to find the series of routers between the sending host and the destination host; the sending host sends an IP datagram having a time-to-live (TTL) field with a value of one to the destination host, and obtains an IP address of the first router by receiving an Internet control message protocol (ICMP) time-out message from the first router; the sending host continuously sends an IP datagram having a TTL field with a value repeatedly increased by one in order to obtain the IP addresses of the series of routers which can be effectively connected to until the sending host cannot

receive any ICMP time-out message.

3. The method according to claim 1, wherein the step e uses the Domain Name Service (DNS) to find the domain of the IP address pointed by the pointer.

4. The method according to claim 1, wherein the step f uses an IP address of a message-routing host registered beforehand in the Well Know Service (WKS) record of the DNS as a way of querying the WKS record to find the IP address of the message-routing-in-charge host.

5. The method according to claim 1, wherein the step f uses the property that a name of message-sending service can be regarded as an alias of the message-routing host to find the IP address of the message-routing-in-charge host by regarding the name of message-sending service as a querying name.

6. A network communication system for efficiently determining a message-transporting path between a sending host and destination host on the Internet by finding a routing host when the sending host cannot effectively connect to the destination host, the system comprising:

a tracing means for finding a series of routers which can be effectively connected to between the sending host and

destination host and successively putting the routers' IP addresses into a list;

a memory means for storing the list;

a pointing means for pointing a pointer to an IP address of the list;

a judging means for judging whether the list comprises at least one IP address and judging whether the IP address pointed by the pointer is the first IP address of the list; and

a searching means for finding a domain of the IP address pointed by the pointer and finding a message-routing-in-charge host in the domain;

wherein at the beginning, when the judging means judges that the list comprises at least one IP address, the pointing means moves the pointer to point to the last IP address of the list and when the searching means can not find the message-routing-in-charge host in the domain of the IP address pointed by the pointer, the pointing means moves the pointer to point to an IP address previous to that presently pointed in the list, wherein the pointing means continuously moves the pointer to point to a previous IP address until the searching means finds out the message-routing-in-charge host or the

judging means judges that the pointed IP address is the first IP address of the list.

7. The system according to claim 6, wherein the tracing means uses a path-tracing program to find the series of routers between the sending host and the destination host; the sending host sends an IP datagram having a time-to-live (TTL) field with a value of one to the destination host, and obtains an IP address of the first router by receiving an Internet control message protocol (ICMP) time-out message from the first router; the sending host continuously sends an IP datagram having a TTL field with a value repeatedly increased by one in order to obtain the IP address of the series of routers which can be effectively connected until the sending host does not receive any ICMP time-out message.

8. The system according to claim 6, wherein the searching means uses the Domain Name Service (DNS) to find the domain of the IP address pointed by the pointer and uses an IP address of a message-routing host registered beforehand in the Well Know Service (WKS) Record of the DNS as a way of querying the WKS record to find the IP address of the message-routing-in-charge host.

9. The system according to claim 6, wherein the searching means uses the DNS to find the domain of the IP address pointed by the pointer and uses the property of regarding a

name of message-sending service as an alias of the message-routing host to find the IP address of the message-routing-in-charge host by using the name of the message-sending service as a querying name.

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